

Listing of Claims:

29. (canceled)

30. (currently amended) A method for recycling according to claim 29 said step of treating the PET flakes comprising a treatment time in said washer of about 20 to 40 minutes and a treatment temperature of about 75 to 95°C of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:
communuting said plastic beverage bottles to form a mixture of particles containing PET flakes; and
washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature of about 75 to 95°C and for about 20 to 40 minutes.

31. (currently amended) A method for recycling according to claim 29, wherein the treatment time is of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:
communuting said plastic beverage bottles to form a mixture of particles containing PET flakes; and
washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature exceeding 70°C and for about 30 minutes.

32. (currently amended) A method for recycling according to claim 29, wherein the treatment temperature is of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:
communuting said plastic beverage bottles to form a mixture of particles containing PET flakes; and
washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature of about 80 to 90°C and for more than 20 minutes.

33. (canceled)

34. (currently amended) A method for recycling according to claim 29, further comprising of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:
communuting said plastic beverage bottles to form a mixture of particles containing PET flakes;
washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature exceeding 70°C and for more than 20 minutes; and
using filtration in said washer.

35. (original) A method for recycling according to claim 34, further comprising using sieving in said washer.

36. (currently amended) A method for recycling ~~according to claim 29, further comprising of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:~~

~~communimuting said plastic beverage bottles to form a mixture of particles containing PET flakes;~~

~~washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature exceeding 70°C and for more than 20 minutes; and using sieving in said washer.~~

37. (currently amended) A method for recycling ~~according to claim 29, further comprising of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:~~

~~communimuting said plastic beverage bottles to form a mixture of particles containing PET flakes;~~

~~washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature exceeding 70°C and for more than 20 minutes; and using filtration following said washer.~~

38. (original) A method for recycling according to claim 37, further comprising using sieving following said washer.

39. (currently amended) A method for recycling ~~according to claim 29, further comprising of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:~~

~~communimuting said plastic beverage bottles to form a mixture of particles containing PET flakes;~~

~~washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature exceeding 70°C and for more than 20 minutes; and using sieving following said washer.~~

40. (canceled)

41. (canceled)

42. (canceled)

43. (canceled)

44. (canceled)

45. (currently amended) A method for recycling ~~according to claim 41, further comprising the step of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:~~

~~communuting said plastic beverage bottles to form a mixture of particles containing PET flakes;~~

~~washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature exceeding 70°C and for more than 20 minutes;~~

~~treating the PET flakes in at least one sink-float separator in the cleaning solution including caustic soda, wherein said treating is subsequent to said washing; and~~

~~separating said cleaning solution including caustic soda from the PET flakes subsequent to said intensively washing, and recycling said cleaning solution including caustic soda.~~

46. (currently amended) A method for recycling ~~according to claim 29, further comprising the steps of PET constituents from plastic material including at least plastic beverage bottles comprising the steps of:~~

~~communuting said plastic beverage bottles to form a mixture of particles containing PET flakes;~~

~~washing the PET flakes, said washing comprising simultaneously treating the PET flakes hydraulically and mechanically in at least one washer with a cleaning solution including caustic soda at a temperature exceeding 70°C and for more than 20 minutes; and~~

~~continuously monitoring the concentration of said cleaning solution including caustic soda, and adjusting said concentration by measured additions to said cleaning solution including caustic soda.~~

47. (canceled)

48. (canceled)

49. (currently amended) A system for recycling ~~in accordance with claim 48, said treatment section further PET flakes from plastic beverage bottles having been communituted to form a mixture of particles comprising:~~

~~a treatment section adapted to treating said mixture including at least one washer and at least one sink-float separator, wherein said washer comprises:~~

~~a stirrer;~~

~~sieve plates and automatic filters in said washer;~~

~~mechanical and hydraulic treatment devices adapted to treating the PET flakes.~~

50. (original) A system for recycling in accordance with claim 49, wherein said hydraulic treatment devices of said washer further comprise nozzle pipes being connected to at least one pump.

51. (original) A system for recycling in accordance with claim 50, said stirrer having a plurality of stirrer stages, wherein said sieve plates, said filters and said nozzle pipes are fixedly disposed in relation to said plurality of stirrer stages.

52. (original) A system for recycling in accordance with claim 50, wherein said pump is a high pressure pump.

53. (currently amended) A system for recycling ~~in accordance with claim 48, said treatment section further PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:~~

~~a treatment section adapted to treating said mixture including at least one washer, at least one sink-float separator, and sieve plates and automatic filters subsequent said washer, wherein said washer comprises:~~

~~a stirrer;
mechanical and hydraulic treatment devices adapted to treating the PET flakes.~~

54. (original) A system for recycling in accordance with claim 53, wherein said hydraulic treatment devices of said washer further comprise a plurality of nozzle pipes being connected to at least one pump.

55. (original) A system for recycling in accordance with claim 54, said stirrer having a plurality of stirrer stages, wherein said sieve plates, said filters and said nozzle pipes are fixedly disposed in relation to said plurality of stirrer stages.

56. (original) A system for recycling in accordance with claim 54, wherein said pump is a high pressure pump.

57. (currently amended) A system for recycling in accordance with claim ~~78~~ 48, wherein said heating device comprises at least one heat exchanger.

58. (currently amended) A system for recycling in accordance with claim ~~78~~ 57, wherein said heating device ~~further~~ comprises at least one direct heater.

59. (currently amended) A system for recycling in accordance with claim ~~78~~ 48, wherein said heating device comprises at least one direct heater.

60. (currently amended) A system for recycling in accordance with claim ~~78~~ 48, wherein said heating device comprises electro-pneumatic control for maintaining a treatment temperature in said washer in the range of about 70 to 95°C.

61. (original) A system for recycling in accordance with claim 60, wherein said treatment temperature is in the range of 80 to 90°C.

62. (currently amended) A system for recycling ~~in accordance with claim 48, wherein said PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:~~

~~a treatment section adapted to treating said mixture including at least one washer and at least one sink-float separator is coupled to said washer and operated with said cleaning solution including caustic soda being at an elevated temperature, wherein said washer comprises:~~

~~a stirrer;~~

~~mechanical and hydraulic treatment devices adapted to treating the PET flakes.~~

63. (currently amended) A system for recycling ~~in accordance with claim 48, further PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:~~

~~a treatment section adapted to treating said mixture including at least one washer, at least one sink-float separator, and at least one intensive washer disposed downstream of said sink-float separator, wherein said washer comprises:~~

~~a stirrer;~~

~~mechanical and hydraulic treatment devices adapted to treating the PET flakes.~~

64. (original) A system for recycling in accordance with claim 63, further comprising a bypass between said sink-float separator and said intensive washer, wherein said bypass provides a hold-up circuit simultaneously in said sink-float separator and in said intensive washer.

65. (original) A system for recycling in accordance with claim 63, further comprising a separator for said cleaning solution including caustic soda, wherein said separator is disposed downstream of said intensive washer.

66. (original) A system for recycling in accordance with claim 65, further comprising a neutralizer disposed downstream of said separator, wherein said neutralizer is connected to a fresh water supply and to an acid measuring station.

67. (original) A system for recycling in accordance with claim 65, further comprising a neutralizer disposed downstream of said separator, wherein said neutralizer is connected to a fresh water supply and to a CO₂ measuring station.

68. (currently amended) A system for recycling ~~in accordance with claim 48, said PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:~~

~~a treatment section adapted to treating said mixture including at least one washer, at least one sink-float separator, and a feeder device comprising a supply branch provided at least from said separator to said washer, wherein said washer comprises:~~

~~a stirrer;~~

~~mechanical and hydraulic treatment devices adapted to treating the PET flakes.~~

69. (original) A system for recycling in accordance with claim 68, wherein said supply branch comprises a supply pump.

70. (original) A system for recycling in accordance with claim 68, said feeder device further comprising a measuring and metering unit connected at least to said supply branch.

71. (original) A system for recycling in accordance with claim 70, wherein said feeder device is also connected to said sink-float separator.

72. (original) A system for recycling in accordance with claim 70, said measuring and metering unit having a pre-heater device.

73. (currently amended) A system for recycling ~~in accordance with claim 48, wherein said PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:~~

~~a treatment section adapted to treating said mixture including at least one washer and at least one sink-float separator is connected to a fresh water supply, wherein said washer comprises:~~

~~a stirrer;~~

~~mechanical and hydraulic treatment devices adapted to treating the PET flakes.~~

74. (currently amended) A system for recycling ~~in accordance with claim 48, further PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:~~

~~a treatment section adapted to treating said mixture including at least one washer, at least one sink-float separator, and a heavy material separator disposed upstream of said washer, wherein said washer comprises:~~

~~a stirrer;~~

~~mechanical and hydraulic treatment devices adapted to treating the PET flakes.~~

75. (currently amended) A system for recycling ~~in accordance with claim 48, further PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:~~

~~a treatment section adapted to treating said mixture including at least one washer, at least one sink-float separator, and a metal separator disposed downstream of said washer, wherein said washer comprises:~~

~~a stirrer;~~

~~mechanical and hydraulic treatment devices adapted to treating the PET flakes.~~

76. (currently amended) A system for recycling in accordance with claim 48, wherein said PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:

a treatment section adapted to treating said mixture including at least one washer is adapted to provide uptake and throughput capacity for a treatment time of more than about 20 minutes and at least one sink-float separator, wherein said washer comprises:

a stirrer;

mechanical and hydraulic treatment devices adapted to treating the PET flakes.

77. (original) A system for recycling in accordance with claim 76, wherein said treatment time is about 30 minutes.

78. (new) A system for recycling PET flakes from plastic beverage bottles having been comminuted to form a mixture of particles comprising:

a treatment section adapted to treating said mixture including a heating device, at least one washer and at least one sink-float separator, wherein said washer comprises:

a stirrer;

mechanical and hydraulic treatment devices adapted to treating the PET flakes.